IN THE CLAIMS:

Please amend claims 14 and 23-24 as follows:

1-13. (Cancelled)

14. (Currently Amended) A liquid crystal display apparatus comprising:

~~a~~ first and second substrates which are disposed facing each other, a liquid crystal sealed between said first and second substrates~~,~~;

a first electrode formed on the liquid crystal side surface of the first substrate~~,~~;

a second electrode formed on the liquid crystal side surface of the second substrate~~,~~;

alignment control layers which cover the surfaces of said first and second electrodes and control the alignment direction of ~~the~~ liquid crystal molecules, when no voltage is applied to be roughly vertical ~~from~~ to the substrate face~~,~~; and

bumps which are formed on at least one surface of said first and second substrates and determine ~~the~~ tilting directions of the liquid crystal molecules when voltage is applied,

wherein both of said alignment control layers and said bumps are formed ~~by~~of a polymerizing a polymerizable compound ~~which is added to~~ included in said liquid crystal, and the alignment direction of the liquid crystal molecules near the bumps when no voltage is applied is roughly vertical ~~from~~ to the substrate face.

15. (Original) A liquid crystal display apparatus according to claim 14, wherein both of said first and second substrates and both of said first and second electrodes are transparent.

16. (Original) A liquid crystal display apparatus according to claim 14, wherein at least part of said bumps contacts said first and second substrates.

17. (Original) A manufacturing method of a liquid crystal display apparatus, comprising sealing a liquid crystal to which a polymerizable compound is added, between a first and second substrates, polymerizing said polymerizable compound in the liquid crystal, forming alignment control layers for controlling the alignment direction of the liquid crystal molecules when no voltage is applied to be roughly vertical from the substrate face, on the surfaces of the first and second substrates, and forming bumps protruding to the liquid crystal side.

18. (Original) A manufacturing method of a liquid crystal display apparatus according to claim 17, wherein said polymerizable compound is polymerized by light.

19. (Original) A manufacturing method of a liquid crystal display apparatus according to claim 18, wherein light irradiation at a higher energy density is performed on bump

formation areas than the other areas for forming said bumps after sealing said liquid crystal in the space between said first and second substrates.

20. (Original) A manufacturing method of a liquid crystal display apparatus according to claim 17, wherein said liquid crystal is sealed between said first and second substrates after a treatment is performed to make the surface energy of bump formation areas of at least one of said first and second substrates higher than the other areas.

21. (Original) A manufacturing method of a liquid crystal display apparatus according to claim 17, wherein spacers are selectively disposed at the bump formation areas between said first and second substrates, and said bumps are formed using said spacers as cores.

22. (Original) A manufacturing method of a liquid crystal display apparatus according to claim 17, wherein at least part of said bumps are allowed to grow from one of said first and second substrates to contact the other substrate.

23. (Currently Amended) A liquid crystal display apparatus comprising:

~~a~~ first and second substrates which are disposed facing each other~~,~~;

a liquid crystal sealed between said first and second substrates~~,~~;

tilt control sections which are disposed on at least one of said first and second substrates and determine the tilting directions of the liquid crystal molecules when voltage is applied~~,~~; and

alignment control layers which are formed on the liquid crystal side faces of the first and second substrates and control the alignment direction of the liquid crystal molecules, when no voltage is applied, to be roughly vertical ~~from~~to the substrate face,

wherein said alignment control layers are formed ~~by polymerizing a~~ of a polymerizable compound ~~which is added to~~ included in said liquid crystal.

24. (Currently Amended) A liquid crystal display apparatus according to claim 23, wherein said tilt control sections are bumps or dents ~~installed~~ on at least one of said first and second substrates.

25. (Original) A liquid crystal display apparatus according to claim 23, wherein said tilt control sections are sections formed by a rubbing treatment on the bases of the alignment control layers.

26. (Original) A liquid crystal display apparatus according to claim 23, wherein said tilt control sections are formed by changing the surface energy of said bases of the alignment control layers.

27. (Original) A manufacturing method of a liquid crystal display apparatus, comprising forming bumps or dents on at least one of the first and second substrates, disposing the first and second substrates facing each other with the faces where the bumps or dents are formed to be inside, sealing a polymerizable compound-added liquid crystal between said substrates, and polymerizing said polymerizable compound in the liquid crystal and forming alignment control layers, for controlling the alignment direction of the liquid crystal molecules when no voltage is applied to be roughly vertical from the substrate face, on the first and second substrates and on the surface of the bumps or dents.

28. (Original) A manufacturing method of a liquid crystal display apparatus, comprising performing a rubbing treatment on a first and second substrates, disposing said first and second substrates facing each other with the face where said rubbing treatment is performed to be inside, sealing a polymerizable compound-added liquid crystal between said substrates, and polymerizing said polymerizable compound in the liquid crystal and forming alignment control layers, for controlling the alignment direction of the liquid crystal molecules when no voltage is applied to be roughly vertical from the substrate face, on the first and second substrates.

29. (Original) A manufacturing method of a liquid crystal display apparatus, comprising partially changing the surface energy of the surface of a first and second substrates,

sealing a polymerizable compound-added liquid crystal between said first and second substrates, and polymerizing said polymerizable compound in the liquid crystal and forming alignment control layers, for controlling the alignment direction of the liquid crystal molecules when no voltage is applied to be roughly vertical from the substrate face, on the first and second substrates.

30. (Original) A manufacturing method of a liquid crystal display apparatus according to claim 29, wherein light is selectively irradiated on said substrate surface via a mask in said partial changing of the surface energy of the substrate surface.

31. (Original) A manufacturing method of a liquid crystal display apparatus, comprising disposing a pair of substrates, on which surface alignment control films are formed, facing each other with the alignment control films to be inside, sealing a liquid crystal to which a polymerizable compound is added, between these substrates, polymerizing said polymerizable compound by irradiating UV rays when no voltage is applied, and forming a polymer network near the surfaces of said alignment control films, wherein the anchoring energy for the liquid crystal molecules on the substrate surface is controlled by controlling the composition, the adding amount and the polymerizing conditions of the polymerizable compound.

32. (Original) A manufacturing method of a liquid crystal display apparatus according to claim 31, wherein said anchoring energy is controlled on each pixel.

33. (Original) A manufacturing method of a liquid crystal display apparatus according to claim 31, wherein a plurality of areas having different anchoring energies are formed in a pixel.

34. (Previously Presented) A liquid crystal apparatus having a liquid crystal layer and a pair of electrodes disposed on both sides of the liquid crystal layer for applying voltage on a liquid crystal enclosed between a pair of substrates, wherein:

the liquid crystal layer comprises a section formed by polymerizing a polymerizable compound in the presence of the liquid crystal by selectively irradiating active energy rays onto the substrate surface when no voltage is applied,

the apparatus further comprising first and second substrates which are disposed facing each other, said liquid crystal being sealed between said first and second substrates, a first electrode formed on the liquid crystal side surface of the first substrate, a second electrode formed on the liquid crystal side surface of the second substrate, alignment control layers which cover the surfaces of said first and second electrodes and control the alignment direction of the liquid crystal molecules when no voltage is applied to be roughly vertical from the substrate face, and bumps which are formed on at least one surface of said first and second substrates and determine the tilting directions of the liquid crystal molecules when voltage is applied, wherein both of said alignment control layers and said bumps are formed by polymerizing a polymerizable compound

which is added to said liquid crystal, and the alignment direction of the liquid crystal molecules near the bumps when no voltage is applied is roughly vertical from the substrate face.

35. (Previously Presented) A manufacturing method of a liquid crystal display apparatus , the liquid crystal apparatus having a liquid crystal layer and a pair of electrodes disposed on both sides of the liquid crystal layer for applying voltage on a liquid crystal enclosed between a pair of substrates, wherein:

the liquid crystal layer comprises a section formed by polymerizing a polymerizable compound in the presence of the liquid crystal by selectively irradiating active energy rays onto the substrate surface when no voltage is applied; and

first and second polarizing elements are disposed on both sides of said pair of substrates such that the absorption axes thereof are perpendicular to each other;

a first 1/4 wavelength plate is disposed between one of the substrates and the first polarizing element;

a second 1/4 wavelength plate is disposed between the other substrate and the second polarizing element; and

the absorption axis of the first polarizing element and the slow axis of the first 1/4 wavelength plate form a 45° angle, the absorption axis of the second polarizing element and the slow axis of the second 1/4 wavelength plate form a 45° angle, and the slow axes of the first 1/4 wavelength plate and the second 1/4 wavelength plate are perpendicular to each other,

the method comprising sealing a liquid crystal to which a polymerizable compound is added, between first and second substrates, polymerizing said polymerizable compound in the liquid crystal, forming alignment control layers for controlling the alignment direction of the liquid crystal molecules when no voltage is applied to be roughly vertical from the substrate face, on the surfaces of the first and second substrates, and forming bumps protruding to the liquid crystal side.

36. (Previously Presented) A liquid crystal apparatus having a liquid crystal layer and a pair of electrodes disposed on both sides of the liquid crystal layer for applying voltage on a liquid crystal enclosed between a pair of substrates, wherein:

the liquid crystal layer comprises a section formed by polymerizing a polymerizable compound in the presence of the liquid crystal by selectively irradiating active energy rays onto the substrate surface when no voltage is applied,

the apparatus comprising first and second substrates which are disposed facing each other, a liquid crystal sealed between said first and second substrates, tilt control sections which are disposed on at least one of said first and second substrates and determine the tilting directions of the liquid crystal molecules when voltage is applied, and alignment control layers which are formed on the liquid crystal side faces of the first and second substrates and control the alignment direction of the liquid crystal molecules when no voltage is applied to be roughly

vertical from the substrate face, wherein said alignment control layers are formed by polymerizing a polymerizable compound which is added to said liquid crystal.

37. (Previously Presented) A manufacturing method of a liquid crystal display apparatus having a liquid crystal layer and a pair of electrodes disposed on both sides of the liquid crystal layer for applying voltage on a liquid crystal enclosed between a pair of substrates, wherein:

the liquid crystal layer comprises a section formed by polymerizing a polymerizable compound in the presence of the liquid crystal by selectively irradiating active energy rays onto the substrate surface when no voltage is applied; and

first and second polarizing elements are disposed on both sides of said pair of substrates such that the absorption axes thereof are perpendicular to each other;

a first 1/4 wavelength plate is disposed between one of the substrates and the first polarizing element;

a second 1/4 wavelength plate is disposed between the other substrate and the second polarizing element; and

the absorption axis of the first polarizing element and the slow axis of the first 1/4 wavelength plate form a 45° angle, the absorption axis of the second polarizing element and the slow axis of the second 1/4 wavelength plate form a 45° angle, and the slow axes of the first 1/4 wavelength plate and the second 1/4 wavelength plate are perpendicular to each other;

the method comprising disposing a pair of substrates, on which surface alignment control films are formed, facing each other with the alignment control films to be inside, sealing a liquid crystal to which a polymerizable compound is added, between these substrates, polymerizing said polymerizable compound by irradiating UV rays when no voltage is applied, and forming a polymer network near the surface of said alignment control films, wherein the anchoring energy for the liquid crystal molecules on the substrate surface is controlled by controlling the composition, the adding amount and the polymerizing conditions of the polymerizable compound.

38. (Original) A liquid crystal display apparatus wherein a first substrate on which surface first electrodes with a vertical alignment control film are formed and a second substrate on which surface a second electrode with a horizontal alignment control film is formed face each other at the alignment control film side, the facing substrates are sealed with a space in between, a liquid crystal comprising a functional monomer is sealed in said space, and a plurality of roughly rectangular pixel electrodes made of the first electrodes are arrayed on the first substrate, for performing the alignment control of said liquid crystal by irradiating light from a direction tilted from the normal line direction on said liquid crystal display apparatus to polymerize said monomer,

wherein said first substrate has a structure for controlling the alignment of the liquid crystal molecules in said liquid crystal when voltage is applied between said pixel electrodes and said second electrode.

39. (Original) A liquid crystal display apparatus according to claim 38, wherein said structure is a fine ITO pattern formed in said pixel electrodes.

40. (Original) A liquid crystal display apparatus according to claim 38, wherein said structure is an insulating pattern formed on said pixel electrodes.

41. (Original) A liquid crystal display apparatus according to claim 38, wherein said functional monomer has two or more functional groups.

42. (Original) A liquid crystal display apparatus according to claim 38, wherein UV rays are used for said light irradiation.

43. (Original) A liquid crystal display apparatus according to claim 38, wherein said functional monomer is an acrylate.

44. (Original) A liquid crystal display apparatus according to claim 38, wherein said functional monomer is a methacrylate.

45. (Original) A liquid crystal display apparatus according to claim 38, wherein said light irradiation is performed by irradiating with light from a first direction, which is tilted from the normal line direction on said liquid crystal display apparatus face, onto partial areas of said pixel electrode faces, and by irradiating with light again from a second direction, which is different from the first direction, onto the entire areas of the pixel electrode faces, for each one of the pixel electrodes.

46. (Original) A liquid crystal display apparatus according to claim 38, wherein said liquid crystal is of a negative type.

47. (Original) A liquid crystal display apparatus according to claim 38, wherein said liquid crystal is of a positive type.

48. (Original) A liquid crystal display apparatus according to claim 38, wherein said liquid crystal is in a normally black mode, and the alignment of the liquid crystal molecules is controlled so as to switch to the direction of the light irradiation by applying voltage.

49. (Previously Presented) A liquid crystal apparatus having a liquid crystal layer and a pair of electrodes disposed on both sides of the liquid crystal layer for applying voltage on a liquid crystal enclosed between a pair of substrates, wherein:

the liquid crystal layer comprises a section formed by polymerizing a polymerizable compound in the presence of the liquid crystal by selectively irradiating active energy rays onto the substrate surface when no voltage is applied,

wherein a first substrate on which surface first electrodes with a vertical alignment control film are formed and a second substrate on which surface a second electrode with a horizontal alignment control film is formed face each other at the alignment control film side, the facing substrates are sealed with a space in between, a liquid crystal comprising a functional monomer is sealed in this space, and a plurality of roughly rectangular pixel electrodes made of the first electrodes are arrayed on the first substrate, for performing the alignment control of the liquid crystal by irradiating light from a direction tilted from the normal line direction on the liquid crystal display apparatus to polymerize the monomer, wherein the first substrate has a structure for regulating the alignment of the liquid crystal molecules in the liquid crystal when voltage is applied between the pixel electrodes and the second electrode.

50. (Original) A liquid crystal display apparatus according to claim 49, wherein said light irradiation is performed by irradiating with light from a first direction, which is tilted from the normal line direction on said liquid crystal display apparatus face, onto partial

areas of said pixel electrode faces, and by irradiating with light again from a second direction, which is different from the first direction, onto the entire areas of the pixel electrode faces, for each one of the pixel electrodes.